

IN THE CLAIMS:

The status of each claim that has been introduced in the above-referenced application is identified in the ensuing listing of the claims. This listing of the claims replaces all previously submitted claims listings.

1. (Previously Presented) An airway adapter configured to substantially simultaneously provide data indicative of respiratory gas flow and of a concentration of at least two substances present in respiration of an individual, comprising:
a housing with a bore formed therethrough;
a respiratory flow detection component formed in the housing and in communication with the bore;
a first respiratory detection component configured to facilitate sensing of at least a first of the at least two substances without diverting respiratory gases from the housing; and
a second respiratory detection component comprising at least one luminescence quenching sensor configured to facilitate sensing of at least a second of the at least two substances without diverting respiratory gases from the housing.

2. (Previously Presented) The airway adapter of claim 1, wherein the respiratory flow detection component comprises:
a structure within the housing for creating therein a pressure differential in respiratory gas flow;
and
first and second pressure bores formed in the housing and located so as to facilitate detection of the pressure differential.

3. (Previously Presented) The airway adapter of claim 1, wherein the first respiratory detection component comprises:
a detection chamber within the housing, a boundary of the detection chamber at least partially defined by at least one window.

4. (Previously Presented) The airway adapter of claim 3, wherein the boundary of the detection chamber is at least partially defined by opposed windows.

5. (Previously Presented) The airway adapter of claim 3, wherein the at least one window is optically compatible so as to permit a beam of infrared radiation to traverse the detection chamber.

6. (Previously Presented) The airway adapter of claim 1, wherein the first respiratory detection component is configured to facilitate measurement of at least one of CO₂, N₂O, and an anesthetic agent.

7. (Canceled)

8. (Previously Presented) The airway adapter of claim 1, wherein the first respiratory detection component and the second respiratory detection component include at least one common element.

9. (Previously Presented) The airway adapter of claim 3, wherein the second respiratory detection component is disposed on at least a portion of the at least one window.

10. (Previously Presented) The airway adapter of claim 3, wherein the at least one window is formed from a polymer.

11. (Previously Presented) The airway adapter of claim 10, wherein the polymer comprises a biaxially oriented polypropylene.

12. (Previously Presented) The airway adapter of claim 2, wherein the structure for creating the pressure differential comprises at least one strut.

13. (Previously Presented) The airway adapter of claim 12, wherein the first and second pressure bores are at least partially formed within the at least one strut.

14. (Previously Presented) The airway adapter of claim 13, wherein the at least one strut comprises a restriction member with at least one surface oriented so as to substantially perpendicularly face a direction of respiratory gas flow through the housing.

15. (Previously Presented) The airway adapter of claim 14, wherein the restriction member has a disk shape.

16. (Previously Presented) The airway adapter of claim 14, wherein the at least one strut includes a taper oriented toward the detection chamber.

17. (Previously Presented) The airway adapter of claim 13, wherein the at least one strut is diametrically disposed and longitudinally extends within the bore.

18. (Previously Presented) The airway adapter of claim 17, wherein the first and second pressure bores communicate respectively with laterally spaced first and second notches formed in the at least one strut proximate a longitudinal axis of the housing.

19. (Previously Presented) The airway adapter of claim 18, wherein the first and second notches are oriented substantially perpendicularly relative to a length of the at least one strut.

20. (Previously Presented) The airway adapter of claim 3, wherein the respiratory flow detection component comprises first and second pressurization ports positioned on opposite sides of the detection chamber.

21. (Previously Presented) The airway adapter of claim 3, wherein the respiratory flow detection component comprises first and second pressurization ports formed in the housing on the same side of the detection chamber.

22. (Original) An airway adapter, comprising:
a first detection component configured to use infrared radiation to facilitate detection of at least one substance in respiration of an individual; and
a second detection component configured to employ luminescence quenching techniques to facilitate detection of at least another substance in respiration of the individual.

23. (Original) The airway adapter of claim 22, further comprising a respiratory air flow detection component.

24. (Previously Presented) The airway adapter of claim 22, wherein the second detection component is configured to facilitate detection of at least respiratory oxygen.

25. (Previously Presented) The airway adapter of claim 22, wherein the first and second detection components have at least one element in common.

26. (Previously Presented) The airway adapter of claim 22, wherein the second detection component comprises a luminescable material.

27. (Previously Presented) The airway adapter of claim 26, further comprising at least one window transparent to wavelengths of radiation capable of exciting the luminescable material and emitted by the luminescable material.

28. (Previously Presented) The airway adapter of claim 22, wherein the first detection component comprises a detection chamber configured to communicate with respiration of the

individual, a boundary of the detection chamber being at least partially defined by at least one window transparent to at least infrared radiation.

29. (Previously Presented) The airway adapter of claim 28, wherein the second detection component comprises a luminescable material.

30. (Previously Presented) The airway adapter of claim 29, wherein the luminescable material is at least partially disposed adjacent a surface of the detection chamber.

31-41. (Canceled)

42. (Previously Presented) An airway adapter, comprising:
a housing including a bore formed at least partially therethrough;
a quantity of luminescable material in communication with the bore; and
an infrared-transparent portion in communication with the bore.

43. (Previously Presented) The airway adapter of claim 42, further comprising a respiratory flow detection component in communication with the bore.

44. (Previously Presented) The airway adapter of claim 42, wherein the luminescable material is at least partially located within a sampling chamber positioned adjacent the infrared-transparent portion.

45. (Previously Presented) The airway adapter of claim 42, wherein the luminescable material is configured to facilitate detection of at least oxygen.

46. (Previously Presented) The airway adapter of claim 42, wherein the infrared-transparent portion is configured to facilitate detection of at least carbon dioxide.

47. (Previously Presented) The airway adapter of claim 42, wherein the infrared-transparent portion is configured to facilitate detection of at least nitrous oxide.

48. (Previously Presented) The airway adapter of claim 42, wherein the infrared-transparent portion is configured to facilitate detection of at least an anesthetic agent in respiration.

49. (Previously Presented) The airway adapter of claim 42, wherein the infrared-transparent portion is also substantially transparent to at least one wavelength of radiation that will excite the luminescable material and to at least another wavelength of radiation that is emitted by the luminescable material and that is indicative of an amount of a substance present in respiration of an individual.

50-74. (Canceled)

75. (Previously Presented) An airway adapter, comprising:
a housing with a flow passage extending therethrough;
a first window in the housing for facilitating luminescence quenching measurements of at least one substance within the flow passage;
a luminescable material disposed in communication with the flow passage and adjacent the first window; and
a pair of second windows positioned in the housing on opposite sides of the flow passage for facilitating infrared measurements of at least another substance within the flow passage.

76. (Previously Presented) The airway adapter of claim 75, wherein a membrane carrying the luminescable material is disposed on an inside of the first window.

77. (Previously Presented) The airway adapter of claim 75, wherein the first window is positioned on a top of the housing.

78. (Previously Presented) The airway adapter of claim 77, wherein each second window of the pair is positioned on a side of the housing.

79. (Previously Presented) The airway adapter of claim 75, wherein the housing includes a seat for receiving a complementarily configured portion of a transducer.

80. (Previously Presented) The airway adapter of claim 79, wherein the seat is configured to orient a radiation source and luminescence detector toward the first window, an infrared source toward one second window of the pair, and an infrared detection component toward another second window of the pair.

81. (Previously Presented) The airway adapter of claim 75, further comprising a respiratory flow detection component located along another position of the flow passage than positions of the first window and the pair of second windows.

82. (Previously Presented) An airway adapter, comprising:
a housing including a flow passage extending through at least a portion of a length thereof;
a first window in the housing for facilitating luminescence quenching measurements of at least one substance in the flow passage;
a luminescable material disposed in communication with the flow passage and adjacent the first window; and
a second window in the housing for facilitating infrared measurements of at least another substance in the flow passage.

83. (Previously Presented) The airway adapter of claim 82, wherein a membrane carrying the luminescable material is disposed on an inside of the first window.

84. (Previously Presented) The airway adapter of claim 82, wherein the first window is positioned on a top of the housing.

85. (Previously Presented) The airway adapter of claim 82, wherein the second window is positioned on a side of the housing.

86. (Previously Presented) The airway adapter of claim 82, wherein the housing includes a seat for receiving a complementarily configured portion of a transducer.

87. (Previously Presented) The airway adapter of claim 86, wherein the seat is configured to orient a radiation source and luminescence detector toward the first window and an infrared source and infrared detection component toward the second window.

88. (Previously Presented) The airway adapter of claim 82, further comprising a respiratory flow detection component located along another position of the flow passage than positions of the first window and the pair of second windows.

89-97. (Canceled)

98. (New) An airway adapter configured to substantially simultaneously provide data indicative of respiratory gas flow and of a concentration of at least two substances present in respiration of an individual, comprising:

a housing with a bore formed therethrough;

a respiratory flow detection component formed in the housing and in communication with the bore;

a first respiratory detection component comprising a detection chamber within the housing, a boundary of the detection chamber at least partially defined by at least one window and configured to facilitate sensing of at least a first of the at least two substances without diverting respiratory gases from the housing; and

a second respiratory detection component disposed on at least a portion of the at least one window and comprising at least one luminescence quenching sensor configured to facilitate sensing of at least a second of the at least two substances without diverting respiratory gases from the housing.

99. (New) An airway adapter configured to substantially simultaneously provide data indicative of respiratory gas flow and of a concentration of at least two substances present in respiration of an individual, comprising:

a housing with a bore formed therethrough;

a first respiratory detection component comprising a detection chamber within the housing, a boundary of the detection chamber at least partially defined by at least one window and configured to facilitate sensing of at least a first of the at least two substances without diverting respiratory gases from the housing;

a second respiratory detection component comprising at least one luminescence quenching sensor configured to facilitate sensing of at least a second of the at least two substances without diverting respiratory gases from the housing; and

a respiratory flow detection component formed in the housing, in communication with the bore, and comprising first and second pressurization ports positioned on opposite sides of the detection chamber.

100. (New) An airway adapter, comprising:

a housing with a flow passage extending therethrough;

a first window positioned on a top of the housing for facilitating luminescence quenching measurements of at least one substance within the flow passage;

a luminescable material disposed in communication with the flow passage and adjacent the first window; and

a pair of second windows positioned on sides of the housing on opposite sides of the flow passage for facilitating infrared measurements of at least another substance within the flow passage.

101. (New) An airway adapter, comprising:

- a housing with a flow passage extending therethrough, the housing including a seat for receiving a complementarily configured portion of a transducer;
- a first window in the housing for facilitating luminescence quenching measurements of at least one substance within the flow passage, the seat being configured to orient a radiation source and luminescence detector of the transducer toward the first window;
- a luminescable material disposed in communication with the flow passage and adjacent the first window; and
- a pair of second windows positioned in the housing on opposite sides of the flow passage for facilitating infrared measurements of at least another substance within the flow passage, the seat being configured to orient an infrared source of the transducer toward one second window of the pair, and an infrared detection component of the transducer toward another second window of the pair.

102. (New) An airway adapter, comprising:

- a housing including a flow passage extending through at least a portion of a length thereof;
- a first window in the housing for facilitating luminescence quenching measurements of at least one substance in the flow passage;
- a luminescable material disposed in communication with the flow passage and adjacent the first window; and
- a second window positioned on a side of the housing for facilitating infrared measurements of at least another substance in the flow passage.

103. (New) An airway adapter, comprising:

- a housing including a flow passage extending through at least a portion of a length thereof, the housing including a seat for receiving a complementarily configured portion of a transducer;

a first window in the housing for facilitating luminescence quenching measurements of at least one substance in the flow passage, the seat of the housing being configured to orient a radiation source and luminescence detector of the transducer toward the first window;

a luminescable material disposed in communication with the flow passage and adjacent the first window; and

a second window in the housing for facilitating infrared measurements of at least another substance in the flow passage, the seat of the housing being configured to orient an infrared source and infrared detection component of the transducer toward the second window.